

WHAT IS CLAIMED IS:

1. A structure comprising a substrate having a surface, a release layer on the surface of the substrate and a first uniform material on top of the release layer, the release layer including powders or partly sintered powders.
2. The structure of claim 1 wherein the first uniform optical material comprises a glass.
3. The structure of claim 1 wherein the first uniform optical material comprises a silica glass.
4. The structure of claim 3 wherein the silica glass is doped.
5. The structure of claim 1 wherein the first uniform material comprises a crystalline material.
6. The structure of claim 1 wherein the substrate comprises elemental silicon.
7. The structure of claim 1 wherein the release layer has the same chemical composition as the first uniform material.
8. The structure of claim 1 wherein the release layer has a different chemical composition from the first uniform material.

9. The structure of claim 1 wherein the release layer comprises SiO₂.
10. The structure of claim 1 wherein the release layer has an average thickness along the substrate surface from about 0.5 microns to about 30 microns.
11. The structure of claim 1 wherein the first uniform material has an average thickness along the release layer from about 1 micron to about 50 microns.
12. The structure of claim 1 wherein the first uniform material has an average thickness along the release layer from about 3 micron to about 20 microns.
13. The structure of claim 1 wherein the release layer and the first uniform material extend over no more than about 50 percent of the area of the substrate surface.
14. The structure of claim 1 further comprising a second uniform material in contact with the first material, wherein the second uniform material has different optical properties from the first uniform material.
15. The structure of claim 14 wherein the release layer is located between the second uniform material and the substrate.

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24. The structure of claim 20 wherein a release layer is between the silica glass and the silicon.
25. The structure of claim 20 wherein the substrate comprises a release layer, which is contacting the optical material.
26. A method for forming a structure with a uniform material on a substrate with a release layer between the uniform material and the substrate, the method comprising:
- 1) depositing a layer of powder on a substrate, the powder in the layer having a lower sintering temperature at the top than the powder in the layer adjacent the substrate; and
 - 2) heating the powder layers to convert the top of the powder layer to a uniform material while the powder layer adjacent the substrate becomes a release layer.
27. The method of claim 26 wherein the powder layer adjacent the substrate comprises silicon dioxide.
28. The method of claim 26 wherein the powder layer comprises doped silicon dioxide.
29. The method of claim 26 wherein the heating is performed in an oven.
30. The method of claim 26 wherein the powder layer is deposited by light reactive deposition.

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